

REMARKS

The application contains claims 5-28. In view of the foregoing amendments and following remarks, Applicants respectfully request allowance of the application.

DRAWINGS

The foregoing amendments to the figures and specification should traverse all outstanding objections to the drawings.

THE CLAIM OBJECTIONS AND § 112, SECOND PARAGRAPH REJECTIONS ARE OVERCOME.

The foregoing amendments to claims 10, 15 and 18-19 overcome the claim objections and indefiniteness issues noted in the Office Action. No surrender of subject matter is intended by the foregoing amendments.

CLAIMS 5-9, 13-17 AND 21-24 DEFINE OVER KELLER

All claims stand rejected as either anticipated or obvious over Keller, U.S.P. 6,622,387, and secondary art. The pending claims as amended define over this art.

Consider claim 5, which recites in part:

when a new load instruction is admitted, predicting whether collision occurs between the load microinstruction and an older store microinstruction,

None of the art discloses this operation. Keller clearly discloses that dependency detections occur only after a system attempts to execute a load instruction. Keller states, at Col. 12:43-51:

By indicating a dependency of the load upon the store which interfered with the load during a previous execution of the load, scheduling of the load may be inhibited until after the store is scheduled. In this fashion, the dependency of the load upon the store ***may be detected during the first execution of the load memory operation*** and store data may be forwarded in response to the load memory operation. Thus, rescheduling and reexecution of the load may be avoided. (emphasis added)

Keller does not disclose the performance advantages provided by the invention of claim 5, specifically that even the first execution of the load may be avoided if a predicted collision is

made when a new load instruction is admitted. Accordingly, claim 5 and dependent claims 6-13 define over the cited art.

Dependent claim 10 further recites:

wherein the store microinstruction is part of a plurality of microinstructions representing a store instruction, wherein a first of the plurality to transfer data to a store unit and a second of the plurality is the older store microinstruction, which is to calculate an address of the store instruction.

Keller refers only to store instructions. There is no disclosure of the multiple microinstructions recited in claim 10. Further, there is no discussion of making a load microinstruction dependent on an older store microinstruction, which transfers data to a store unit. None of the cited art teaches this subject matter. While supplementary art discloses microinstructions generally, there is no teaching or suggestion in the art to make the load microinstruction dependent on the first microinstruction recited in claim 10 (as opposed to, for example, the second microinstruction). Accordingly, this claim also defines over the art.

Independent claim 14 recites:

predicting whether a new load microinstruction collides with a first previously received store microinstruction when the new load microinstruction is admitted to a scheduler,

Again, Keller only discloses detection of a collision when the a load instruction is scheduled, not when it is admitted to a scheduler. Claims 14-21, therefore, also define over the cited art.

NEW CLAIMS 25-28

New claims 25-28 are submitted for examination. Claims 25-26 expressly recite the nature of the STD and STA microinstructions. Claim 27 recites an express dependency check made between the STA and load microinstruction and dependency clearing based on execution of the STD microinstruction. As noted with respect to claim 10, this subject matter is not taught or suggested by the prior art.

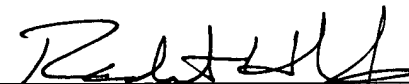
CONCLUSION

All claims are allowable over the cited art. Applicants respectfully request allowance of the application.

The Office is authorized to charge any fees or credit any overpayments under 37 C.F.R.
§ 1.16 or § 1.17 to Deposit Account No. 11-0600.

Respectfully submitted,

Date: 9/16/04

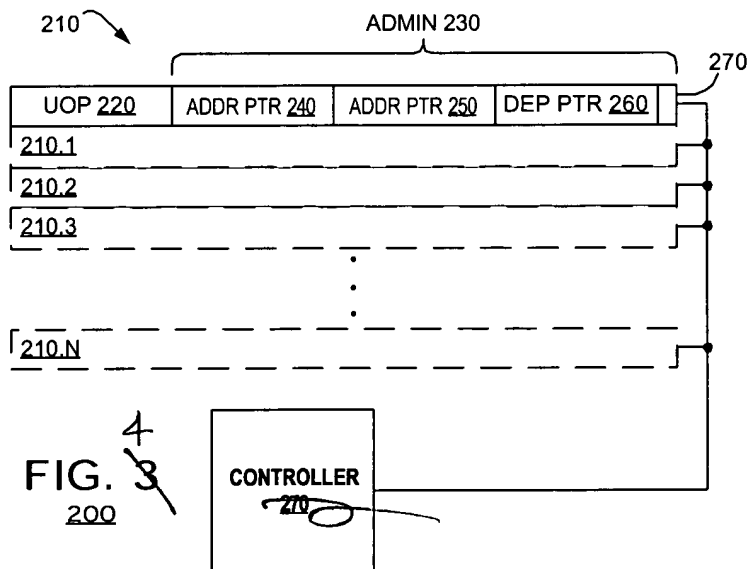
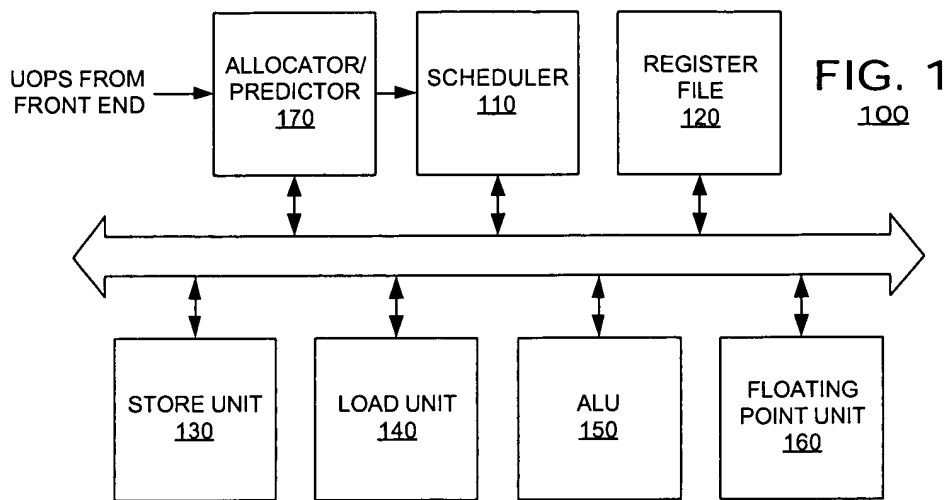
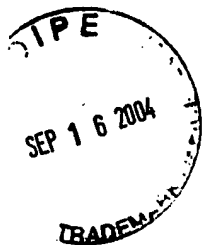


Robert L. Hails, Jr.
Registration No. 39,702

KENYON & KENYON
1500 K Street, N.W.
Washington, D.C. 20005
Ph.: (202) 220-4200
Fax.: (202) 220-4201

IN THE DRAWINGS

Pursuant to the Examiner's request, FIGS. 3 and 4 have been corrected. Replacement sheets are enclosed, as well as marked-up sheets to show changes.



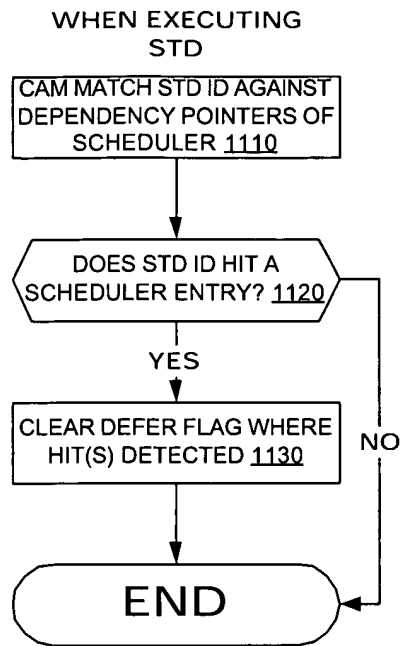
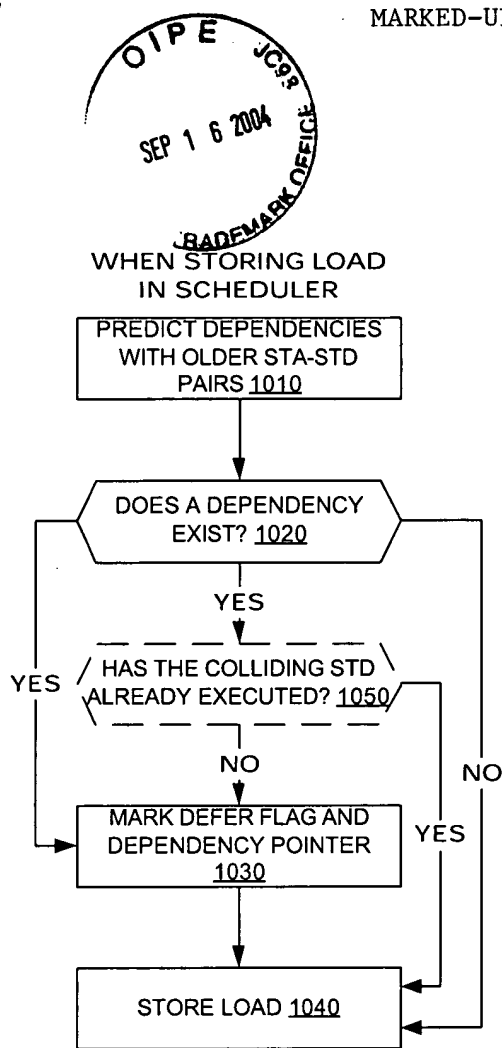


FIG. 4 3

1100